

York University
School of Kinesiology and Health Science

HH/KINE 4140 3.0
Nutrition and Human Diseases

Winter Term 2019

COURSE OUTLINE

INSTRUCTOR

Olasunkanmi Adegoke, PhD
Lumbers 223/ 362 Bethune College
Extension: 20887
Email: kine4140@yorku.ca

For email correspondence, ensure 'KINE 4140' appears on the subject line. Don't send blank emails, even if you have an attachment.

Office hours: by appointment, in general after 1.00pm on lecture days

Moodle site for the course: Current course and scholarship info and other relevant info will be available on this site.

TEACHING ASSISTANT

Gagandeep Mann
Office hours: TBA

PREREQUISITE

- HH/KINE 4020 3.0 Human Nutrition

TIME AND LOCATION:

First class on Thursday, **January 3, 2019**

Last class on Tuesday, **April 2, 2019**

Location: [HNE 034](#)
Day of the week: Tuesdays and Thursdays
Time: 11.30 pm – 1:00 pm
No classes on [February 16-22 \(Winter Reading Days\)](#)

INSTRUCTORS' STATEMENT

This course builds on the basic understanding of nutrition presented in KINE 4020. It focuses on the roles that nutrition and dietary practices play in the prevention, treatment and management of human diseases. Special attention will be paid to the effects of nutrients on tissue and body systems (muscle and skeletal, immune, cardiovascular), and on whole body health. Students with interests in nutritional determinants of health and body performance, as well as those with interests in health and medicine, clinical nutrition, and dietetics will find the course useful. We will use formal lectures, student presentations and, when

appropriate, guest lectures by practicing clinical dietitians, public health agency workers, or people in allied fields to deliver course contents.

COURSE DESCRIPTION

This course discusses nutrition as it affects human health and management/treatment of human diseases. It discusses: nutrition and the immune system; nutrition and aging; ethnic nutrition and health; nutrition and the health of skeletal muscle; food and drug interaction; and nutrition in the treatment and prevention of selected human diseases including myopathies, cancer, cardiovascular disease, osteoporosis, and diabetes. Through participation in group seminar presentations, students will also develop skills in interpersonal relationships, formulation of research questions, reviewing scientific papers, and in preparing and giving oral scientific presentations.

COURSE LEARNING OBJECTIVES

- 1) Brief statement of the purpose of the Course. The course will help students understand the link between nutrition, dietary practices and different aspects of human health. Students will understand how nutrition can affect immune function and aging; link between prenatal and perinatal nutrition and chronic diseases, and nutritional genomics. They will learn about the roles of specific nutrients in the prevention and treatment/management of selected human diseases. Because the course also incorporates group seminar presentations on topics in human nutrition, students will learn to work in groups, read and critique design of nutrition experiments, and give oral presentations.
- 2) Brief list of specific learning objectives: by the end of the course students should be able to
 - a. Discuss and critique the roles nutrients and dietary practices play in the prevention and management/treatment of common human chronic diseases (such as cancer, diabetes, cardiovascular diseases, digestive diseases, and musculoskeletal diseases).
 - b. Identify, discuss and critique the roles and effectiveness of a group of nutrients (called nutraceuticals) that plays roles additional to their serving as a source of fuel for the body.
 - c. Discuss the roles that genetic and epigenetic factors play in determining the health status of an individual and nutrition therapy outcomes.
 - d. Identify and discuss the challenges minorities and immigrants face in obtaining and applying science-based nutrition information for improved health and wellbeing.
 - e. Through group seminar preparation and presentation, work with others in researching and presenting nutrition-related seminars, and in so doing would have developed better interpersonal skills.
 - f. Identify, discuss and critique the steps involved in nutrition related research, such as experimental design, subject selection, statistical analyses, data presentation and interpretation.

COURSE STRUCTURE

- A. Class lectures by the instructors. Class notes will be available for on Moodle.
- B. Group power point presentations coordinated by the instructor and TA. See below.

REQUIRED READING

Required Readings:

1. Susanne Rautiainen et al 2016. **Dietary supplements and disease prevention — a global overview.** Nature Reviews Endocrinology 12, July 2016: 407-420.

2. Paola M. Hunter and Robert A. Hegele 2017. **Functional foods and dietary supplements for the management of dyslipidaemia.** *Nat Rev Endocrinol.* 2017 May;13(5):278-288. doi: 10.1038/nrendo.2016.210.
3. Sascha Sauer & Annabell Plauth 2017. **Health-beneficial nutraceuticals—myth or reality?** *Appl Microbiol Biotechnol.* 2017 Feb;101(3):951-961. doi: 10.1007/s00253-016-8068-5.
4. Martine J. Sealy et al 2016. **Content validity across methods of malnutrition assessment in patients with cancer is limited** *Journal of Clinical Epidemiology* 76 (2016) 125e136.
5. **Siscovick DS, Barringer TA, Fretts AM, et al. Omega-3 Polyunsaturated Fatty Acid (Fish Oil) Supplementation and the Prevention of Clinical Cardiovascular Disease: A Science Advisory From the American Heart Association.** *Circulation.* 2017 Apr 11;135(15):e867-e884.
6. Susan T. Mayne, Mary C. Playdon, and Cheryl L. Rock. **Diet, Nutrition and Cancer: Past, Present and Future.** *Nat Rev Clin Oncol.* 2016 Aug;13(8):504-15.
7. Alicia L. Carriquiry. Understanding and Assessing Nutrition. *Annu. Rev. Stat. Appl.* 2017. 4:123–46.
8. Nádia Cristina Fávaro-Moreira, Stefanie Krausch-Hofmann, Christophe Matthys, et. al. **Risk Factors for Malnutrition in Older Adults: A Systematic Review of the Literature Based on Longitudinal Data.** *Adv Nutr* 2016;7:507–22.
9. Lukas Schwingshackl, Heiner Boeing, Marta Stelmach-Mardas et. al. **Dietary Supplements and Risk of Cause-Specific Death, Cardiovascular Disease, and Cancer: A Systematic Review and Meta-Analysis of Primary Prevention Trials.** *Adv Nutr* 2017;8:27–39.
10. Karen Kaplan 2013. **Presentations: Pressure to Perform.** *Nature* 494, Feb 21, 2013, pp 391-

TEXTBOOK

M Nelms, K P Sucher, and K Lacey: **Nutrition Therapy and Pathophysiology**, 3rd Edition. Wadsworth, Cengage Learning. Belmont, CA, USA, 2015. ISBN-13:978-1-305-11196-7.

2nd edition of the book too is fine

Useful text:

S R Rolfes, K Pinna and E Whitney: Understanding Normal and Clinical Nutrition, 9th edition. Wadsworth, Cengage Learning. Belmont, CA, USA, 2012. ISBN-13: 978-0-8400-6845-3; ISBN-10: 0-8400-6845-X

COURSE CONTENT: Through formal lectures, special readings, and seminars, the course will cover many of the following topics

1. Introduction: Diet and Health
2. Nutrition and Public Health: Food and Water Safety
3. Nutrition and the Immune System: Inflammation
4. Nutrition and neoplastic diseases
5. Nutrition in the prevention and treatment of diseases of the cardiovascular system
6. Life Cycle Nutrition:
 - a. Pregnancy and lactation
 - b. Nutrition and Ageing
7. Nutritional Genomics
8. Nutrition and diseases of the musculoskeletal system
9. Nutrition and liver diseases
10. Nutrition in Complementary and Alternative Medicine (CAM)
11. Nutrition and diabetes

12. Selected topics in Medical Nutrition: Nutrition Support (Nutrition Intervention; Enteral and Parenteral Nutrition, Drug-Nutrient Interactions)
13. Selected Topics in Ethnic and Community Nutrition

EVALUATION

Midterm Exam	25 %
Group Power Point Presentation-1	7%
Group Power Point Presentation-2	28%
Final exam (cumulative)	40%

MIDTERM AND FINAL EXAMS, POWER POINT PRESENTATIONS

The Midterm and Power point Presentations will be held on the following days during regular class hours. The Midterm will **include multiple choice, short answers, fill-in-the-blanks, matching, true-or-false, and/or short essays**.

A) Midterm:

- Tuesday February 12, 2019
- Includes materials covered in class up to and including Thursday, February 7, 2019.

B) Power Point Presentations

Students will work in groups of 2-3, depending on the final # of student enrolled in the course. **Group topic, composition and dates of presentations will be assigned randomly**. Students will be assigned a topic from the list provided by the instructor. Students are invited to submit topics they would like to see included in the list. To be considered for inclusion, the topics must be emailed to the instructor by Monday February 12, 2018. Each group will research the topic assigned to it, using the latest research articles on the topic, and give **2 presentations**, a minor and a major one. Journal articles selected for use must have been published within the last 2 years, unless no current research is being conducted on the topic. At least 4 highly relevant research articles must be read, discussed and cited.

Groups and Topics will be assigned the week of February 11, 2019

Presentation 1 (Minor):

Groups 1-8: March 6

Groups 9- : March 8

- Presentations are 10 minutes long (7-minute presentation, 3-minute question period) long.
- **Student attendance is mandatory**

This presentation is meant to be preparatory to the major presentation. The objective is to give the instructor and fellow students an opportunity to critique your planned presentation. This presentation should contain, at the very least: a description of the topic; outline of the sub-topics, outline/summary of the main journal articles you will use, and what you expect your audience to take from the presentation. Your presentation cover (first) slide **must** contain your group number and title, and the names of group members. You do **not** need to submit/send any document for this presentation.

Presentation 2 (Major):

Groups 1-4: March 19

Groups 5-8: March 21

Groups 9-12: March 26

Groups 13-: March 28

- Presentations are 18 minutes long (15-minute presentation, 3-minute question period).

- **Student attendance is mandatory**

Also note for **Presentation 2**

Group	Students can meet with the TA for guidance about group presentation, preparation of slides, & 1-page summary sheet	Email a copy of Presentation file & 1-page summary of presentation to the <u>instructor & TA.</u> <u>Submit hard copy in class.</u>	Students present Power point presentation during class
Groups 1-4	March 11-18	March 15	March 19
5-8	March 11-18	March 19	March 21
9-12	March 18-25	March 22	March 26
13-	“	March 26	March 28

Group grades for the assignment will be based on:

- Strict compliance with instructions: for example, your group will lose marks if you fail to send a copy of your presentation and summary (single space; font size: 12; font type: Times New Roman or Palatino) to the TA and instructor by the date indicated (**3/28**).
- Presentation (15/28; presentation content, relevance and currency (6/28), appropriate background info and logical organization of materials (3/28), ability to work/present together as a group (3/28), quality and clarity of slides (3/28); ability to answer questions (4/28; meaning your group loses 4 points if you do not allow sufficient time for questions).
- Final individual grade will also reflect attendances at the seminars (**3/28**), and contribution of each member (carrying your fair share, background preparation: **3/28**).

For further instructions on the presentations, see below for ‘Additional Instructions on Power Point Presentations’.

C) Final Exam (cumulative):

- Will be held during the York U official final exam period. Time and location to be determined.
- **Selected Materials from Presentations-2 will be on the Final Exam.**

D) Please note that there will be *NO* MAKE-UP exams for the Midterm or the Final Exam. If you do not write the Midterm, the weight of the exam will be added to that of the Final Exam. No documentation is required **but** you must let the instructor know (email) **by 4pm Wednesday February 6, 2019. If you fail to do this and do not show up for the midterm, the maximum weight of the midterm in the calculation of your course grade will be 22%; that is, there is a 3% penalty.**

E) If a student, for whatever reason/s, chooses not to write the final exam, **s/he must** let the instructor know (email) **at least 5 days before the date of the final exam.** If a student fails to do this and does not show up to write the final exam, the maximum grade you can get in the final exam will be 42%; that it is, **there is a 3% penalty.** This will be in addition to any points a student may lose as indicated in (D) above.

If a student does not to write the Final Exam, s/he will need to write a **Deferred Exam AFTER** York U’s official ‘final exam period’. To be eligible to write the Deferred Exam, students must:

- 1 provide adequate documentation (doctor's note, other proper documentation, etc.) and
- 2 complete the Deferred Exam Form (https://registrar.yorku.ca/pdf/deferred_standing_agreement.pdf)
- 3. Depending on their compliance with instructions in D and E, students may lose marks, as stipulated in D and E above.

The **Deferred Exam will be cumulative**, i.e. will cover ALL the subjects/topics covered in the course as well as contents of the seminar presentations. The **weight** of the Deferred Exam will be equivalent to the cumulative weight of the Final Exam (and any missed Midterm), except as indicated in (D & E) above.

ACADEMIC HONESTY

The following is an excerpt from York University's Senate Policy on Academic Honesty:

"Academic honesty requires that persons do not falsely claim credit for the ideas, writing or other intellectual property of others, either by presenting such works as their own or through impersonation. Similarly, academic honesty requires that persons do not cheat (attempt to gain an improper advantage in an academic evaluation), nor attempt or actually alter, suppress, falsify or fabricate any research data or results, official academic record, application or document."

For more information, please access the following website:

<http://www.yorku.ca/secretariat/policies/document.php?document=69>

STUDENT CODE OF CONDUCT

Students are reminded that they should be polite, courteous and civil during their interactions with the course instructor, TA and other students. No abuse, aggression, harassment, intimidation, threats or assault will be tolerated, be it verbal or otherwise. This includes soliciting or "pushing" the instructor or TA for a higher grade.

The following is an excerpt from the Student Code of Conduct, specifically sections 4a and 4b:

"The following behaviors are prohibited. This list is not exhaustive but provides examples of breaches of the standard of conduct. This Code deliberately does not place violations in a hierarchy. The University views all complaints made under the provisions of this Code as serious.

- a. Breaking federal, provincial or municipal law, such as: breaking into University premises; vandalism; trespassing; unauthorized use of keys to space on campus; unauthorized possession or use of firearms, explosives, or incendiary devices; possession or consumption of, or dealing in, illegal drugs; smoking of legal substances outside designated areas; cruelty to animals; theft of University or private property including intellectual property; unauthorized copying of documents; possession of stolen property.
- b. Threats of harm, or actual harm, to a person's physical or mental wellbeing, such as: assault; verbal and non-verbal aggression; physical abuse; verbal abuse; intimidation; sexual assault; harassment; stalking; hazing."

For the complete Student Code of Conduct and for more details, please access the following website:

<http://secretariat-policies.info.yorku.ca/?s=students+code+of+conduct>

POLICY REGARDING ACADEMIC ACCOMMODATION FOR STUDENTS WITH DISABILITIES

The following is the Policy Statement as approved by the Senate on 1991/06 and revised 2005/02/24:

“York University shall make reasonable and appropriate accommodations and adaptations in order to promote the ability of students with disabilities to fulfill the academic requirements of their programs.

The nature and extent of accommodations shall be consistent with and supportive of the integrity of the curriculum and of the academic standards of programs or courses.

Provided that students have given sufficient notice about their accommodation needs, instructors shall take reasonable steps to accommodate these needs in a manner consistent with the guidelines established hereunder.

'Disabilities' shall be defined as those conditions so designated under the Ontario Human Rights Code in force from time to time, and will in any event include physical, medical, learning, and psychiatric disabilities.”

For more information, please access the following website:

<http://www.yorku.ca/secretariat/policies/document.php?document=68>

IMPORTANT COURSE INFORMATION FOR STUDENTS

All students are expected to familiarize themselves with the following information, available on the Senate Committee on Curriculum & Academic Standards webpage (CCAS) (see Reports, Initiatives, Documents)

http://www.yorku.ca/secretariat/senate_cte_main_pages/ccas.htm

- York’s Academic Honesty Policy and Procedures/Academic Integrity Website
- Ethics Review Process for research involving human participants
- Course requirement accommodation for students with disabilities, including physical, medical, systemic, learning and psychiatric disabilities
- Student Conduct Standards
- Religious Observance Accommodation

Additional Instructions on Power Point Presentations-2

Group Power Point Presentations (Minor and Major): 35%

If using power point or other software for your presentations, check ahead of time to be sure your software and its version are compatible with YorkU computer systems.

MAJOR

- Each group will present a (maximum) 18-minute seminar on the research topic

Recommendation: 15-minute presentation; 3 minutes for questions and answers. Because you will be graded on your ability to answer questions posed by the class, your group will **lose marks** (10% of seminar) if you do not allow sufficient time for questions.

- Students will generate a 1-page summary (including the references) and final seminar presentation file of what they will present. Follow the presentation outline below. **These MUST be emailed to instructor and TA, at or before 4pm on the dates indicated. A hard copy must also be submitted to the instructor in class by the dates indicated in the course outline.**

- On the date of presentation, a designated member of each group must arrive early to upload the presentation onto the computer.

You will lose the allotted time and /opportunity to present if you do not arrive on time.

THINGS THAT YOU SHOULD NOTE

- a) The seminar is meant to be a review of the topics you have been given.
- b) Therefore, the seminar should be topic-focused rather than journal article-focused. You should cite papers to back up your points, but the goal is to focus on the **topic** but not on specific papers. Look at the outline below.
- c) Let's assume that your topic is, Are gut bacteria dangerous for people of all ages?

Your presentation will address the following:

- i) Introduction and background: Introduce the topic: what is it? What are bacteria? Where are they found? What do they typically do in our bodies? Etc. Include information that will make it easier for your audience to follow what you will say in subsequent sections of your talk.
- ii) Body of presentation: You can list some bacteria and specific benefits and diseases that they have been associated with.
Next, because you cannot possibly discuss all bacteria and the diseases they are associated with, you have to decide on which bacteria and disease/s you will review in greater details. Depending on the particular bacteria and how many articles are available, you may choose at least 3-4 articles. Since you are limited as to how many papers you can use, be sure that the journal articles you have chosen sufficiently address the (now) narrowed topic. In doing this you should ensure that you also present opposing views and findings, if available. You do not have to devote equal time to 'pros and cons': you can put more emphasis on either if available literature indicates that that is the dominant view.
- iii) If you are making a particular point, it must be supported by appropriate reference. For example, if from your readings you come to the conclusion that a specific strain of bacterium can cause diabetes, you must indicate how you reached that conclusion. If it comes from the result of a study, how was the study done? How many people were studied? Age and characteristics of the study subjects...are they young or old, healthy or have some underlying medical conditions? I am not asking that you provide all the details about how the study was done, but you should provide sufficient info on the design of the study so that anyone listening can deduce whether the design of the study would allow one to reach the conclusion stated.
- iv) In concluding your presentation, you must summarize what you consider to be the most important points, based on your presentation. In other words, if you want your audience to remember 3-5 points, what would those be? Also state the limitations to the review/studies cited; what the next questions are, etc.
- v) You are restricted to use research articles published only in the last 2 years. However, if the most current or thorough papers on the subject were published outside of that window, you may use them, but you must indicate so in your presentation. Bear in mind though that I may check this.
- vi) On the last slide of your presentation, you must list all the **main** references used.

Referencing

- In PowerPoint, you should cite the references at the bottom right of the slide *if it applies to the whole slide*.

-If you need to cite *a few references in one slide*, then references should appear immediately after each sentence/paragraph, preferably bottom right.

- References should appear in smaller fonts than regular text, in parentheses, preferably italicized.
- You should cite the references using last name of the first author (and "et al" if more than 2 authors; both authors if only 2 authors), abbreviated journal title and year of publication.

For example, for the reference,

Burke DB, Sliver S, Holt LE, Smith-Palmer T, Culligan CJ, Chilibeck PD. The effect of continuous low dose creatine supplementation on force, power, and total work. Int J Sports Nutr Exerc Metab 2000;10:235-44.

You will write: *Burke et al, Int J Sports Nutr Exerc Metab 2000;10:235-244*